Data Validation Checklist
Inorganic Analyses

Project:	35TH Avenue Superfund Site	Project No:	60430028; 1
Laboratory:	TestAmerica – Savannah, GA	Job ID.:	680-106200-3
Method:	SW-846 6010C	Associated Samples:	Refer to **Attachment A** (Sample Summary)
Matrix:	Soil	Samples Collected:	10/06/2014 & 10/07/2014
Reviewer:	Karen M Trujillo, URS Group, Inc.	Date:	08/11/2015
Concurrence[1]:	Jenine Abbassi, URS Group, Inc.	Date:	08/14/2015

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were sample preservation requirements met? If pH of aqueous sample >2 and was not adjusted by laboratory prior to analysis, J- flag positive results and R- flag non-detect results.			✓		
2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples?	✓				
3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt?		✓			
4. Do any soil/sediment samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis.		✓			
5. Have any technical holding times, determined from date of collection to date of analysis, been exceeded? (Hg: ≤28 days, other metals: ≤6 months; Cr+6: ≤24 hours from extraction). If not, then J- flag positive results and R- flag non-detect aqueous results.		✓			
6. Were results for all project-specified target analytes reported?	✓				
7. Were project-specified Reporting Limits achieved for undiluted sample analyses?		✓		Resident Soil RSL with THQ = 1.0 (ORNL, June 2015) for target analytes: • Aluminum: 77,000 mg/Kg • Arsenic: 0.68 mg/Kg • Iron: 55,000 mg/Kg • Lead: 400 mg/Kg The MDL for arsenic is less than the respective above-mentioned RSL in the following undiluted samples: • 680-106200-31 (CV0965D-CS6), [MDL is 0.71 mg/Kg] • 680-106200-37 (CV0739A-CS12), [MDL is 1.2 mg/Kg] A data gap does not exist as arsenic was detected in both samples.	
8. Were method blank (MB) prepared at the appropriate frequency (one per 20 samples, batch, matrix, and level)?	✓				

[1] Independent technical reviewer

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
9. Was a calibration blank (ICB/CCB) analyzed at the beginning, after every 10th sample, and at the end of each analytical run?	✓				
10. Were target analytes detected in the method and/or calibration blanks?	✓			MB 680-353436/1-A: Iron @ 15.0 J mg/Kg (MDL 7, RL 20). Calibration blanks were not evaluated.	
11. Were target analytes reported in equipment/rinsate blanks analyses above the DL?			✓	According to the QAPP, a rinsate blank is to be collected after each decontamination event, which occurs once per week per the client. A rinsate blank is not associated with this sampling event. Blank contamination will be evaluated based on method blank results.	
12. Were contaminants detected in samples below the blank contamination action level? o If blank result > RL, • Flag sample results ≤ RL with a U • Flag positive sample results > RL and ≤10x blank result , as J+ positive results o If blank result ≤RL, • Flag sample results ≤ RL with a U • Flag positive sample results > RL and ≤10x blank result , as J+ positive results		✓		Qualification of iron results due to blank contamination is not warranted, as the concentration of iron in all sample results was greater than 10x the concentration in the blank result. An evaluation of the effect of blank contamination on soil sample results was based on method blank results, and not calibration blank results.	
13. Are there negative laboratory blank results with the absolute value ≤RL? If yes, then flag positive and non-detect sample results that are < 10x absolute blank value as J- and UJ, respectively.		✓			
14. Was a field duplicate analyzed?	✓			• CV0965D-CSD6 (680-106200-32) is a field duplicate of sample CV0965D-CS6 (680-106200-31). • CV0613B-CSD6 (680-106200-45) is a field duplicate of CV0613B-CS6 (680-106200-43) • CV0753A-CSD (0-4") (680-106200-50) is a field duplicate of sample CV0753A-CS (0-4") (680-106200-49).	
15. Was precision deemed acceptable as defined by the project plans?		✓		Refer to **Attachment B** (Field Duplicate Evaluation)	J
16. Were initial and continuing calibration standards analyzed at the lab/project-specified frequency for each instrument? o 6010C: • ICAL: Blank and one standard • ICV initially, and CCV every 10th sample and at the end of the analytical run • Lower Limit of Quantitation Check Sample (CRI) to be analyzed after establishing lower laboratory reporting limits and as needed o 7471A: • ICAL: Blank and five standards • ICV initially, and CCV every 10th sample and at the	✓			6010C: 10/13/2014, 10/14/2014, 10/15/2014, 10/16/2014, and 10/17/14. One blank and one standard initially. ICV initially, and CCV every 10 samples and at end of run. CRI after initial calibration blank analysis.	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
end of the analytical run ○ 7196A: • ICAL: Blank and minimum of five standards • ICV initially, and CCV every 10th sample (15th per Method) and at the end of the analytical run					
17. Were these results within lab/project specifications? ○ 6010C • ICV/CCV (Criteria: 90-110%R): ▪ If %R <75, then J- flag positive results and R-flag non-detects ▪ If 75-89%R, then J- flag positive results and UJ flag non-detects ▪ If 111-125%R, then J flag positive results ▪ If >125%R, then J+ flag positive results ▪ If >160%R, then R flag positive results • CRI (Method: 70-130%R, Laboratory: 50-150%R; Project: 50-150%R for Sb, Pb, and Tl, and 70-130%R for all other analytes): ▪ If CRI %R <50 (<30% for Sb, Pb, TL), then R flag results ≤ 2x RL and J flag positive results >2x RL ▪ If CRI %R 50-69% (30-49% for Sb, Pb, TL), then J- and UJ flag positive results <2x RL and ND, respectively ▪ If CRI %R >130% and ≤180% (>150%, but ≤200% for Sb, Pb, TL), then J+ flag positive results <2x RL ▪ If CRI %R >180% (>200% for Sb, Pb, TL), then R flag positive results ○ 7471A • ICV/CCV (Criteria: 80-120%R): ▪ If correlation coefficients <0.995, then J and UJ flag positive and non-detect results. ▪ If %R <65, then J- flag positive results and R-flag non-detects ▪ If 65-79%R, then J- flag positive results and UJ flag non-detects ▪ If 121-135%R, then J flag positive results ▪ If >135%R, then J+ flag positive results ▪ If >170%R, then R flag positive results • CRI (Method: Not required, Laboratory: 50-150%R, Project: 70-130%R): ▪ If CRI %R <50, then R flag results ≤ 2x RL and J flag positive results >2x RL ▪ If CRI %R 50-69%, then J- and UJ flag positive results <2x RL and ND, respectively ▪ If CRI %R >130% and ≤180%, then J+ flag positive	✓				

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
results <2x RL ▪ If CRI %R >180%, then R flag positive result o 7196A: • ICV/CCV (Criteria: 90-110%R): ▪ If correlation coefficients <0.995, then J and UJ flag positive and non-detect results. ▪ If %R <65, then J- flag positive results and R-flag non-detects ▪ If 65-90%R, then J- flag positive results and UJ flag non-detects ▪ If 110-135%R, then J flag positive results ▪ If >135%R, then J+ flag positive results ▪ If >170%R, then R flag positive results					
18. Was the interference check sample (ICS) analyzed at the beginning of each ICP analytical run?	✓				
19. Are ICS recoveries within 80-120% of the true value? If not, qualify data as follows when native Al, Fe, Ca, and Mg sample concentrations are equal to or greater than the ICS spiking level: o If >120%R (or >true value plus 2x CRQL), J+ flag positive results o If 50-79%R (or less than true value – 2x the CRQL), J- flag positive results and UJ flag non-detects o If <50%R, J- flag positive results and R-flag non-detects	✓				
20. Was a LCS analyzed for each preparation batch (one per 20 samples per matrix and level)?	✓				
21. Did LCS recoveries meet method/laboratory/project (80-120%R) specifications? o Soil: • LCS result > Upper control limit (UCL): J+ flag positive results • LCS result < Lower control limit (LCL): J- flag positive results and UJ flag non-detects o Aqueous: • If <50%R, then J- and R flag positive and ND results, respectively • If 50-LCL%R, J- and UJ flag positive and ND results, respectively • >UCL: J+ Flag positive results • >150%R: R Flag results	✓				
22. Was the RPD between LCS and LCSD results within method/laboratory /project control limits (≤20%RPD)? If not, J and UJ flag positive and non-detect results, respectively			✓	LCS only	
23. Was a Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analyzed once per preparation batch?	✓			• Batch 353346: o 680-106200-31 (CV0965D-CS6), MS/MSD o Batch Sample, PDS. Lab sample 680-106200-B-18-	
24. Is the MS and MSD parent sample a project-specific sample?	✓	✓			

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
				A is a project specific sample (CV0971WW-CS6) and results were reported under Job ID 680-106200-2. • Batch 353312: (Batch Sample), MS/MSD/PDS. Lab sample 680-106200-A-1 is a project-specific sample (CV0005Y-CS6) and results were reported under Job ID 680-106200-1. • Batch 353262: (Batch Sample), MS/MSD/PDS. Lab sample 680-106200-A-51 is a project-specific sample [CV0753B-CS (0-4")] and results were reported under Job ID 680-106200-4. • Batch 353249: (Batch Sample), MS/MSD/PDS • Batch 353436: (Batch Sample), MS/MSD	
25. Was a post-digestion spike (PDS) analysis conducted when MS and/or MSD results did not meet control limits (Note: PDS is not required for silver, mercury, or hexavalent chromium)?	✓			680-106200-18 (CV0971WW-CS6), which is a project-specific sample with results reported under Job ID 680-106200-2.	
26. For all analytes with sample concentration < 4 x spike concentration, are spike recoveries within method (6010C: 75-125%R MS/MSD and 80-120%R PDS; 7471A: 80-120%R MS/MSD; 7196A: 85-115%R MS), laboratory (MS, MSD, and PDS: 75-125%R for 6010C/7471 (as applicable) and 80-120%R for 7196), and project (as noted below) specifications? *Only QC results for project samples are evaluated.* If not, o 6010C: • If MS %R <30 and PDS %R <75, then J- and R Flag positive and ND results, respectively • If MS %R <30 and PDS %R >75, then J flag positive and UJ flag non-detect results • If MS and MSD %R 30-74 and PDS%R <75, then J- flag positive and UJ flag non-detect results • If MS and MSD %R 30-74 and PDS%R ≥75, then J flag positive and UJ flag non-detect results • If MS, MSD, and PDS %R >125, J+ flag positive results • If MS and MSD %R >125 and PDS %R ≤125, then J flag positive results • If MS and MSD %R <30 and no PDS, then J- flag positive and R-flag non-detect results • If MS and MSD %R 30-74 and no PDS, then J- and UJ flag positive and non-detect results, respectively • If MS and MSD %R >125 and no PDS, then J+ flag positive results o 7471A/7196: • If MS %R <30, then J- and R Flag positive and ND results, respectively		✓		680-106200-31 (CV0965D-CS6): Arsenic MS and MSD @ 55 and -9%R (Lab/Project: 75-125%R); No PDS for the sample, J⁻ Flag.	J-

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
• If MS and MSD %R 30-LCL, then J- flag positive and UJ flag non-detect results • If MS and MSD %R >UCL, then J+ flag positive results					
27. For all analytes with sample concentration < 4 x spike concentration, were laboratory/project (≤20%RPD) criteria met for precision during the MS and MSD analysis? *Only QC results for project samples are evaluated.* o If RPD >20%, J and UJ flag positive and non-detect results.	✓				
28. Was a serial dilution conducted for 6010C/EPA 200.7?	✓				
29. Is the serial dilution parent sample a project-specific sample?		✓		• Batch Sample: Lab sample 680-106200-B-18-A SD is a project-specific sample (CV0971WW-CS6) and results were reported under Job ID 680-106200-2. • Batch Sample: Lab sample 680-106200-B-1-A SD is a project-specific sample (CV0005Y-CS6) and results were reported under Job ID 680-106200-1. • Batch Sample: Lab sample 680-106200-B-51-A SD is a project-specific sample [CV0753B-CS (0-4")] and results were reported under Job ID 680-106200-4. • Batch Sample: Lab ID 640-49420-A-9-A SD • Batch Sample: Lab ID 680-106194-B-2-A SD	
30. Is the percent difference between the serially diluted result and undiluted result less 10% (for those analytes with native concentrations greater than 50x the DL)? *Only QC results for project samples are evaluated.* o If %D >10, J and UJ flag positive and non-detect results, respectively.			✓		
31. Was a laboratory duplicate analyzed?		✓			
32. Was the lab duplicate analysis conducted on a project-specific sample?			✓		
33. Were criteria for laboratory/project precision met? *Only QC results for project samples are evaluated.* o If RPD values >20% (35% for soil/sediment) or absolute difference > RL (2x RL for soil/sediment), then J and UJ flag positive and non-detect results, respectively			✓		
34. Were lab comments included in report? If yes, summarize contents or attach a copy of the narrative.	✓			Refer to **Attachment C** (Case Narrative)	

Comments: The data validation was conducted in accordance with the *Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1* (OTIE, October 2012). The data review process was modeled after the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Data Review* (EPA 540-R-04-004, October 2004). Sample results have been qualified based on the results of the data review process (**Attachment D**). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment

Data Validation Checklist (Continued)

DV Flag Definitions:

J-	The result is an estimated quantity, but the result may be biased low.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
UJ	The analyte was analyzed for, but was not detected. The reported limit is approximate and may be inaccurate or imprecise.

ATTACHMENT A

SAMPLE SUMMARY

SAMPLE SUMMARY

Client: Oneida Total Integrated Enterprises LLC

Job Number: 680-106200-3
Sdg Number: 680-106200-03

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-106200-31	CV0965D-CS6	Solid	10/06/2014 1530	10/11/2014 0933
680-106200-31MS	CV0965D-CS6	Solid	10/06/2014 1530	10/11/2014 0933
680-106200-31MSD	CV0965D-CS6	Solid	10/06/2014 1530	10/11/2014 0933
680-106200-32	CV0965D-CSD6	Solid	10/06/2014 1530	10/11/2014 0933
680-106200-33	CV0965D-CS12	Solid	10/06/2014 1540	10/11/2014 0933
680-106200-34	CV0965D-CS18	Solid	10/06/2014 1555	10/11/2014 0933
680-106200-35	CV0965D-CS24	Solid	10/06/2014 1600	10/11/2014 0933
680-106200-36	CV0739A-CS6	Solid	10/06/2014 1350	10/11/2014 0933
680-106200-37	CV0739A-CS12	Solid	10/06/2014 1400	10/11/2014 0933
680-106200-38	CV0739A-CS18	Solid	10/06/2014 1410	10/11/2014 0933
680-106200-39	CV0739A-CS24	Solid	10/06/2014 1420	10/11/2014 0933
680-106200-40	CV0509T-CS6	Solid	10/07/2014 0920	10/11/2014 0933
680-106200-41	CV0509T-CS12	Solid	10/07/2014 0930	10/11/2014 0933
680-106200-42	CV0509T-CS18	Solid	10/07/2014 0940	10/11/2014 0933
680-106200-43	CV0613B-CS6	Solid	10/07/2014 1450	10/11/2014 0933
680-106200-44	CV0509T-CS24	Solid	10/07/2014 0950	10/11/2014 0933
680-106200-45	CV0613B-CSD6	Solid	10/07/2014 1450	10/11/2014 0933
680-106200-46	CV0613B-CS12	Solid	10/07/2014 1500	10/11/2014 0933
680-106200-47	CV0613B-CS18	Solid	10/07/2014 1510	10/11/2014 0933
680-106200-48	CV0613B-CS24	Solid	10/07/2014 1520	10/11/2014 0933
680-106200-49	CV0753A-CS (0-4")	Solid	10/07/2014 1610	10/11/2014 0933
680-106200-50	CV0753A-CSD (0-4")	Solid	10/07/2014 1610	10/11/2014 0933

ATTACHMENT B

FIELD DUPLICATE EVALUATION

Evaluation of Field Duplicate Results **Attachment C**

Analyte	CV0965D-CS6 680-106200-31		RL	CV0965D-CSD6 680-106200-32		RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
Aluminum	12000		24	10000		19	mg/kg	107.5	**18**	NA	NA	None, RPD ≤ 50%
Arsenic	34		2.4	28		1.9	mg/kg	10.75	**19**	NA	NA	None, RPD ≤ 50%
Iron	30000		24	25000		19	mg/kg	107.5	**18**	NA	NA	None, RPD ≤ 50%
Lead	290		12	230		0.93	mg/kg	32.33	**23**	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

mg/kg - Milligrams per kilogram
NA - Not applicable
RL - Reporting limit
RPD - Relative percent difference

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

Evaluation of Field Duplicate Results **Attachment C**

Analyte	CV0613B-CS6 680-106200-43		RL	CV0613B-CSD6 680-106200-45		RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
Aluminum	12000		20	13000		22	mg/kg	105	**8**	NA	NA	None, RPD ≤ 50%
Arsenic	31		2.0	38		2.2	mg/kg	10.5	**20**	NA	NA	None, RPD ≤ 50%
Iron	38000		20	56000		22	mg/kg	105	**38**	NA	NA	None, RPD ≤ 50%
Lead	100		0.98	120		11	mg/kg	29.95	**18**	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

mg/kg - Milligrams per kilogram
NA - Not applicable
RL - Reporting limit
RPD - Relative percent difference

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

Evaluation of Field Duplicate Results **Attachment C**

Analyte	CV0753A-CS (0-4") 680-106200-49		RL	CV0753A-CSD (0-4") 680-106200-50		RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
Aluminum	11000		19	13000		21	mg/kg	100	**17**	NA	NA	None, RPD ≤ 50%
Arsenic	25		1.9	32		2.1	mg/kg	10	**25**	NA	NA	None, RPD ≤ 50%
Iron	38000		19	79000		21	mg/kg	100	**70**	NA	NA	**J/UJ-flag, RPD > 50%**
Lead	370		0.96	360		1.0	mg/kg	4.9	**3**	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

mg/kg - Milligrams per kilogram
J - Estimated value
NA - Not applicable
RL - Reporting limit
RPD - Relative percent difference
UJ - Not detected and the limit is estimated

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

ATTACHMENT C

CASE NARRATIVE

CASE NARRATIVE
Client: Oneida Total Integrated Enterprises LLC
Project: 35th Avenue Superfund Site
Report Number: 680-106200-3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

No additional analytical or quality issues were noted, other than those described below or in the Definitions/Glossary page.

RECEIPT

The samples were received on 10/11/2014 9:33 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.8º C, 1.8º C, 4.8º C and 5.2º C.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) LOW LEVEL PAH

Samples CV0965D-CS6 (680-106200-31), CV0965D-CSD6 (680-106200-32), CV0965D-CS12 (680-106200-33), CV0965D-CS18 (680-106200-34), CV0965D-CS24 (680-106200-35), CV0739A-CS6 (680-106200-36), CV0739A-CS12 (680-106200-37), CV0739A-CS18 (680-106200-38), CV0739A-CS24 (680-106200-39), CV0509T-CS6 (680-106200-40), CV0509T-CS12 (680-106200-41), CV0509T-CS18 (680-106200-42), CV0613B-CS6 (680-106200-43), CV0509T-CS24 (680-106200-44), CV0613B-CSD6 (680-106200-45), CV0613B-CS12 (680-106200-46), CV0613B-CS18 (680-106200-47), CV0613B-CS24 (680-106200-48), CV0753A-CS (0-4") (680-106200-49) and CV0753A-CSD (0-4") (680-106200-50) were analyzed for Semivolatile Organic Compounds (GC/MS) Low level PAH in accordance with EPA SW846 Method 8270D.

Method(s) 8270D_LL_PAH: Manual integration was performed on the following sample(s): CV0965D-CS12 (680-106200-33), CV0965D-CS18 (680-106200-34), CV0965D-CS24 (680-106200-35), CV0965D-CSD6 (680-106200-32), CV0509T-CS18 (680-106200-42), CV0613B-CS12 (680-106200-46), CV0613B-CS18 (680-106200-47), CV0613B-CS24 (680-106200-48), CV0613B-CS6 (680-106200-43), CV0613B-CSD6 (680-106200-45), CV0753A-CS (0-4") (680-106200-49), CV0753A-CSD (0-4") (680-106200-50), CV0753B-CS (0-4") (680-106200-51), CV0965D-CS6 (680-106200-31), CV0509T-CS6 (680-106200-40), CV0509T-CS12 (680-106200-41), CV0739A-CS12 (680-106200-37), CV0739A-CS18 (680-106200-38), CV0739A-CS24 (680-106200-39), CV0739A-CS6 (680-106200-36).

Method(s) 8270D_LL_PAH: The following sample(s) was diluted due to the nature of the sample matrix: CV0965D-CS12 (680-106200-33), CV0965D-CSD6 (680-106200-32), CV0971WW-CS6, CV0509T-CS18 (680-106200-42), CV0613B-CS12 (680-106200-46), CV0613B-CS6 (680-106200-43), CV0613B-CSD6 (680-106200-45), CV0753A-CS (0-4") (680-106200-49), CV0753A-CSD (0-4") (680-106200-50), CV0965D-CS6 (680-106200-31), CV0965D-CS6 (680-106200-31 MSD), CV0509T-CS12 (680-106200-41), CV0739A-CS12 (680-106200-37), CV0739A-CS18 (680-106200-38), CV0739A-CS6 (680-106200-36), CV0965D-CS6 (680-106200-31 MS). As such, surrogate and MS/MSD spike recoveries were diluted out and are not reported.

Method(s) 8270D_LL_PAH: The continuing calibration verification (CCV) analyzed in batch 354069 was outside the method criteria for the following analyte(s): Indeno[1,2,3-cd]pyrene and o-Terphenyl. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method(s) 8270D_LL_PAH: The continuing calibration verification (CCV) analyzed in batch 354071 was outside the method criteria for the following analyte(s): o-Terphenyl. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Acenaphthylene and Indeno[1,2,3-cd]pyrene recovery is outside criteria low for the MS of sample CV0965D-CS6 (680-106200-31) in batch 680-354069. Refer to the QC report for details.

METALS (ICP)

Samples CV0965D-CS6 (680-106200-31), CV0965D-CSD6 (680-106200-32), CV0965D-CS12 (680-106200-33), CV0965D-CS18 (680-106200-34), CV0965D-CS24 (680-106200-35), CV0739A-CS6 (680-106200-36), CV0739A-CS12 (680-106200-37), CV0739A-CS18 (680-106200-38), CV0739A-CS24 (680-106200-39), CV0509T-CS6 (680-106200-40), CV0509T-CS12 (680-106200-41), CV0509T-CS18 (680-106200-42), CV0613B-CS6 (680-106200-43), CV0509T-CS24 (680-106200-44), CV0613B-CSD6 (680-106200-45), CV0613B-CS12 (680-106200-46), CV0613B-CS18 (680-106200-47), CV0613B-CS24 (680-106200-48), CV0753A-CS (0-4") (680-106200-49) and CV0753A-CSD (0-4") (680-106200-50) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C.

Iron was detected in method blank MB 680-353436/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Method(s) 6010C: The method blank for batch 680-353436 contained iron above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Many of the metals have recovery outside criteria low for the MS and/or MSD of sample CV0965D-CS6 (680-106200-31) in batch 680-353949. Aluminum failed the recovery criteria high. Refer to the QC report for details.

PERCENT SOLIDS/MOISTURE

Samples CV0965D-CS6 (680-106200-31), CV0965D-CSD6 (680-106200-32), CV0965D-CS12 (680-106200-33), CV0965D-CS18 (680-106200-34), CV0965D-CS24 (680-106200-35), CV0739A-CS6 (680-106200-36), CV0739A-CS12 (680-106200-37), CV0739A-CS18 (680-106200-38), CV0739A-CS24 (680-106200-39), CV0509T-CS6 (680-106200-40), CV0509T-CS12 (680-106200-41), CV0509T-CS18 (680-106200-42), CV0613B-CS6 (680-106200-43), CV0509T-CS24 (680-106200-44), CV0613B-CSD6 (680-106200-45), CV0613B-CS12 (680-106200-46), CV0613B-CS18 (680-106200-47), CV0613B-CS24 (680-106200-48), CV0753A-CS (0-4") (680-106200-49) and CV0753A-CSD (0-4") (680-106200-50) were analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP.

ATTACHMENT D

QUALIFIED SAMPLE RESULTS

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0965D-CS6 Lab Sample ID: 680-106200-31

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 15:30

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 79.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	24	12	mg/Kg			1	6010C
7440-38-2	Arsenic	34	2.4	0.71	mg/Kg		J-	1	6010C
7439-89-6	Iron	30000	24	8.4	mg/Kg			1	6010C
7439-92-1	Lead	290	12	6.4	mg/Kg			10	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0965D-CSD6 Lab Sample ID: 680-106200-32

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 15:30

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 90.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	19	9.3	mg/Kg			1	6010C
7440-38-2	Arsenic	28	1.9	0.55	mg/Kg			1	6010C
7439-89-6	Iron	25000	19	6.5	mg/Kg			1	6010C
7439-92-1	Lead	230	0.93	0.49	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0965D-CS12 Lab Sample ID: 680-106200-33

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 15:40

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 94.6

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	10000	18	9.2	mg/Kg			1	6010C
7440-38-2	Arsenic	21	1.8	0.54	mg/Kg			1	6010C
7439-89-6	Iron	35000	18	6.4	mg/Kg			1	6010C
7439-92-1	Lead	120	9.2	4.9	mg/Kg			10	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0965D-CS18 Lab Sample ID: 680-106200-34

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 15:55

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 91.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	21	11	mg/Kg			1	6010C
7440-38-2	Arsenic	14	2.1	0.63	mg/Kg			1	6010C
7439-89-6	Iron	39000	21	7.5	mg/Kg			1	6010C
7439-92-1	Lead	48	11	5.7	mg/Kg			10	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0965D-CS24 Lab Sample ID: 680-106200-35

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 16:00

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 89.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	16000	20	9.8	mg/Kg			1	6010C
7440-38-2	Arsenic	12	2.0	0.58	mg/Kg			1	6010C
7439-89-6	Iron	34000	20	6.9	mg/Kg			1	6010C
7439-92-1	Lead	34	0.98	0.52	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0739A-CS6 Lab Sample ID: 680-106200-36

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 13:50

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 91.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	6300	22	11	mg/Kg			1	6010C
7440-38-2	Arsenic	20	2.2	0.64	mg/Kg			1	6010C
7439-89-6	Iron	43000	22	7.6	mg/Kg			1	6010C
7439-92-1	Lead	410	1.1	0.57	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0739A-CS12 Lab Sample ID: 680-106200-37

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 14:00

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 93.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	5500	40	20	mg/Kg			1	6010C
7440-38-2	Arsenic	24	4.0	1.2	mg/Kg			1	6010C
7439-89-6	Iron	19000	40	14	mg/Kg		B	1	6010C
7439-92-1	Lead	110	2.0	1.1	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0739A-CS18 Lab Sample ID: 680-106200-38

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 14:10

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 86.9

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	7300	20	10	mg/Kg			1	6010C
7440-38-2	Arsenic	40	2.0	0.60	mg/Kg			1	6010C
7439-89-6	Iron	27000	20	7.1	mg/Kg			1	6010C
7439-92-1	Lead	23	1.0	0.54	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0739A-CS24 Lab Sample ID: 680-106200-39

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/06/2014 14:20

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 82.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	9100	23	11	mg/Kg			1	6010C
7440-38-2	Arsenic	130	2.3	0.67	mg/Kg			1	6010C
7439-89-6	Iron	44000	23	8.0	mg/Kg			1	6010C
7439-92-1	Lead	74	1.1	0.60	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0509T-CS6 Lab Sample ID: 680-106200-40

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 09:20

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 90.0

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	21	10	mg/Kg			1	6010C
7440-38-2	Arsenic	19	2.1	0.61	mg/Kg			1	6010C
7439-89-6	Iron	45000	21	7.3	mg/Kg			1	6010C
7439-92-1	Lead	69	1.0	0.55	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0509T-CS12 Lab Sample ID: 680-106200-41

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 09:30

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 90.5

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	20	9.8	mg/Kg			1	6010C
7440-38-2	Arsenic	20	2.0	0.58	mg/Kg			1	6010C
7439-89-6	Iron	50000	20	6.8	mg/Kg			1	6010C
7439-92-1	Lead	54	0.98	0.52	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0509T-CS18 Lab Sample ID: 680-106200-42

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 09:40

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 89.8

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	19	9.7	mg/Kg			1	6010C
7440-38-2	Arsenic	19	1.9	0.57	mg/Kg			1	6010C
7439-89-6	Iron	49000	19	6.8	mg/Kg			1	6010C
7439-92-1	Lead	46	0.97	0.51	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0613B-CS6 Lab Sample ID: 680-106200-43

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 14:50

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 91.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	20	9.8	mg/Kg			1	6010C
7440-38-2	Arsenic	31	2.0	0.58	mg/Kg			1	6010C
7439-89-6	Iron	38000	20	6.9	mg/Kg			1	6010C
7439-92-1	Lead	100	0.98	0.52	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0509T-CS24 Lab Sample ID: 680-106200-44

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 09:50

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 85.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	12000	22	11	mg/Kg			1	6010C
7440-38-2	Arsenic	10	2.2	0.66	mg/Kg			1	6010C
7439-89-6	Iron	31000	22	7.8	mg/Kg			1	6010C
7439-92-1	Lead	14	1.1	0.59	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0613B-CSD6 Lab Sample ID: 680-106200-45

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 14:50

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 91.2

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	22	11	mg/Kg			1	6010C
7440-38-2	Arsenic	38	2.2	0.63	mg/Kg			1	6010C
7439-89-6	Iron	56000	22	7.5	mg/Kg			1	6010C
7439-92-1	Lead	120	11	5.7	mg/Kg			10	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0613B-CS12 Lab Sample ID: 680-106200-46

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 15:00

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 92.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	21	11	mg/Kg			1	6010C
7440-38-2	Arsenic	33	2.1	0.63	mg/Kg			1	6010C
7439-89-6	Iron	39000	21	7.5	mg/Kg			1	6010C
7439-92-1	Lead	67	1.1	0.57	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0613B-CS18 Lab Sample ID: 680-106200-47

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 15:10

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 78.7

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	22	11	mg/Kg			1	6010C
7440-38-2	Arsenic	120	2.2	0.64	mg/Kg			1	6010C
7439-89-6	Iron	84000	22	7.5	mg/Kg			1	6010C
7439-92-1	Lead	44	1.1	0.57	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0613B-CS24 Lab Sample ID: 680-106200-48

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 15:20

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 89.6

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	16000	19	9.5	mg/Kg			1	6010C
7440-38-2	Arsenic	74	1.9	0.56	mg/Kg			1	6010C
7439-89-6	Iron	65000	19	6.7	mg/Kg			1	6010C
7439-92-1	Lead	41	9.5	5.1	mg/Kg			10	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0753A-CS (0-4") Lab Sample ID: 680-106200-49

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 16:10

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 87.3

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	11000	19	9.6	mg/Kg			1	6010C
7440-38-2	Arsenic	25	1.9	0.57	mg/Kg			1	6010C
7439-89-6	Iron	38000	19	6.7	mg/Kg		J	1	6010C
7439-92-1	Lead	370	0.96	0.51	mg/Kg			1	6010C

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: CV0753A-CSD (0-4") Lab Sample ID: 680-106200-50

Lab Name: TestAmerica Savannah Job No.: 680-106200-3

SDG ID.: 680-106200-03

Matrix: Solid Date Sampled: 10/07/2014 16:10

Reporting Basis: DRY Date Received: 10/11/2014 09:33

% Solids: 87.6

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7429-90-5	Aluminum	13000	21	10	mg/Kg			1	6010C
7440-38-2	Arsenic	32	2.1	0.61	mg/Kg			1	6010C
7439-89-6	Iron	79000	21	7.2	mg/Kg		J	1	6010C
7439-92-1	Lead	360	1.0	0.54	mg/Kg			1	6010C